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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,080	08/28/2001	John C. Christenson	DP-301187	6412

7590

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EXAMINER

PHAN, JAMES

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/940,080

Applicant(s)

CHRISTENSON, JOHN C.

Examiner

James Phan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-44 is/are allowed.
- 6) ☒ Claim(s) 45-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 8/28/01 has been considered by the examiner.

### ***Additional Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Trutna, Jr. discloses wafer/mask alignment system using diffraction gratings.

### ***Claim Rejections - 35 USC § 112***

Claims 45-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 45 is indefinite in that it is not clear how "the elements of the element pairs being movable ..." (claim 45, lines 8-11) with a single etching step recited in the claim. Claims 46-53 also are rejected in that they are dependent on the indefinite claim and thus inherit the deficiency above.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 45, 47-48 and 52, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Bloom et al '783.

The single step of "etching a layer overlying a cavity in a surface of a substrate to form trenches that delineate first and second sets of elements" (claim 45, lines 2-3) for manufacturing a diffraction grating device read on the Figs. 2(a) – 2(d) of the applied prior art. In Figs. 2(c-d) elements (18) have been taken as a first set of elements; and elements (20) have been taken as a second set of elements. Also, see Figs. 1 and 8.

In re claims 48 and 52 the feature recited in each of the claims has not been given any patentable weight because the single step recited in parent claim 1 does not form the claimed feature.

### ***Allowable Subject Matter***

Claims 1-44 are allowed.

Claims 46 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Until such time claims 49-51 and 53 are definite, an indication of allowability of the claims is deferred.

The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest (1) a diffraction grating device having means for moving the elements of the element pairs toward and away from each other to decrease and increase, respectively, the first gaps and to increase and decrease,

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respectively, the second gaps (claim 1, lines 8-10); (2) a variable diffraction grating device having at least means for charging the capacitive plates so as to move the elements of the element pairs toward and away from each other to decrease and increase, respectively, the first gaps and to increase and decrease, respectively, the second gaps (claim 19, lines 9-12); (3) a method of diffracting radiation having the step of moving the elements of the element pairs toward and away from each other to increase and decrease, respectively, the second gaps therebetween (claim 28, lines 9-10); (4) a method of manufacturing a diffraction grating device having the step of forming means for moving the elements of the element pairs toward and away from each other to decrease and increase, respectively, the first gaps and to increase and decrease, respectively, the second gaps (claim 46); and (5) a method of manufacturing a diffraction grating device having the step of forming means for moving the elements of the element pairs toward and away from each other to decrease and increase, respectively, the first gaps and to increase and decrease, respectively, the second gaps (claim 46).

### ***Suggestion***

Applicant is suggested to amend claim 45 to include the method step in claim 2 so as to overcome all of the rejections.

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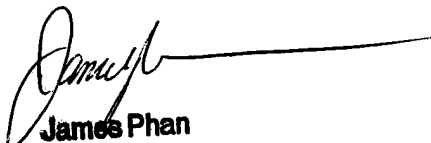
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Phan whose telephone number is (703)308-4810. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703)308-1867. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Phan, J.  
March 18, 2003

  
James Phan  
Primary Examiner